

**INFORMATION ON UNDERGRADUATE AND GRADUATE STUDENTS
WHO HAVE WORKED ON JCCRER PROJECT 1.1**

**Sergei N. Bayankin
Nikolai G. Bougrov
Denis V. Ivanov
Victor A. Krivoschapov
Marina V. Rtischeva
Natalia B. Shagina
Elena A. Shishkina
Valentina A. Shved
Valeri A. Taranenko
Elena E. Tokareva
Marina I. Vorobiova**

September 1, 2001

Name: Sergei N. Bayankin

Date of starting work under Project 1.1: July 2000

Type of degree when work started under Project 1.1: Russian Diploma (Nuclear Physics)

Description of work under Project 1.1: Interpretation of EPR measurements

Paid or unpaid: Paid

Other activities:

- International Science and Technology Center (ISTC) Project #509, 1999–Present
- INCO COPERNICUS Contract No. ERBIC-15CT-969305 1998–1999

Education: Graduated from the Urals State Technical University, Ekaterinburg, Russia, in 1998 with a Russian Diploma (considered equivalent to an M.S. degree).

Accomplishments: Participated in the successful completion of Milestone 2 for the Second Phase of Project 1.1 (April 2001).

Conferences:

- Interregional Conference “Discussion on the Problems of Long-term Ecological and Genetic After-effects of the nuclear explosion at Totskoye Test Site in the Southern Urals and Their Resolution,” Ekaterinburg, Russia, October 2000 (oral presentation)

Current Status: Russian Diploma; graduate student of the Metal Physics Institute of the Russian Academy of Sciences (his scientific mentor is Dr. E. Shishkina of the URCRM Biophysics Laboratory)

Scientific Publications:

Zhukovsky, M. V.; Yarmoshenko, I. V.; **Bayankin, S. N.** Risk assessment in Sverdlovsk Oblast. In: Proceedings of 4th international symposium ‘Ural Atomic, Ural Industrial.’ Ekaterinburg: Russian Academy of Sciences, Ural Branch; 1996:186–191.

Pokvalitov, M. F.; Aseev, N. I.; **Bayankin, S. N.** Medical treatment planning system ROCS. First experience of its use. In: Modern beam diagnostics and beam therapy. Chelyabinsk: Russian Academy of Sciences, Ural Branch; 1997:143–145.

Koshta, A. A.; Wieser, A.; Ignatiev, E. A.; **Bayankin, S. N.**; Romanyukha, A. A.; Degteva, M. O. New computer realization of routine EPR-dosimetry on tooth enamel. Description and verification. Appl. Radiat. Isot. 52:1287–1290; 2000.

Shishkina E. A.; Shved V. A.; **Bayankin S. N.**; Ivanov D. V. Application of EPR spectrometry for individual external dose reconstruction. In: Proceedings of first regional conference on ‘Adaptation of Biological Systems to Natural and Extreme Conditions’ Chelyabinsk, 2001 (in Russian) (in press).

Shishkina, E. A.; Shved, V. A.; Degteva, M. O.; Tolstykh, E. I.; Ivanov, D. V.; **Bayankin, S. N.**; Anspaugh, L. R.; Napier, B. A.; Wieser, A.; Jacob, P. Description of the computer database “tooth” and discussion of requirements for EPR measurements to support a validation study of external doses calculated by use of the Techa River Dosimetry System–2000. Chelyabinsk and Salt Lake City: Urals Research Center for Radiation Medicine and University of Utah; Final report for Milestone 2; April 2001 (in Russian and English).

Name: Nikolai G. Bougrov

Date of starting work under Project 1.1: February 1995.

Type of degree when work started under Project 1.1: Russian Diploma (Mechanics)

Description of work under Project 1.1: Applications of thermoluminescence dosimetry for dose reconstruction and validation of external dose on the Techa Riverside

Paid or unpaid: Paid

Other activities:

- International Science and Technology Center (ISTC) Project #509, 1999–Present
- INCO COPERNICUS Contract No. ERBIC-15CT-969305 1997–1999

Education: Received Ph.D. (Radiation Protection) in 1999 from the Institute of Biophysics, Moscow, Russia.

Accomplishments: Successful completion of Milestone 4 for the First Phase of Project 1.1 (January 1999).

Conferences:

- Problems of Ecology and Ecological Education in the Chelyabinsk Region, Chelyabinsk, Russia, April 1998 (oral presentation)
- Second International Symposium “Chronic Radiation Exposure: Possibilities of biological indication,” Chelyabinsk, Russia, March 2000 (poster presentation)

Current Status: Ph.D., Researcher at the URCRM Biophysics Laboratory

Scientific Publications:

Bougrov, N. G.; Vlasov, V. K.; Kiryukhin, O. V.; Fatkulbayanova, N. L. Thermoluminescence measurements of ceramic samples from accidentally polluted territory of Southern Urals. *Radiat. Meas.* 24:493–498; 1995.

Degteva, M. O.; Kozheurov, V. P.; Burmistrov, D. S.; Vorobiova, M. I.; Valchuk, V. V.; **Bougrov, N. G.;** Shishkina, H. A. An approach to dose reconstruction for the Urals population. *Health Phys.* 71:71–76; 1996.

Göksu, Y.; Heide, L. M.; **Bougrov, N. G.;** Dalheimer, A. R.; Meckbach R. Retrospective dose assessment and dose depth distribution in a brick from South Ural by using thermoluminescence. *Appl. Radiat. Isot.* 47:433–440; 1996

Bougrov, N. G.; Göksu, H. Y.; Haskell, E.; Degteva, M. O.; Meckbach, R.; Jacob, P. Issues in the reconstruction of environmental doses on the basis of thermoluminescence measurements in the Techa Riverside. *Health Phys.* 75:574–583; 1998.

Bougrov, N. G. Assessment of the external gamma-doses on the Techa River Valley area using thermoluminescence method. In: Problems of ecology and ecological education in the Chelyabinsk Region. Chelyabinsk: Chelyabinsk State Pedagogical University; 1999:95–99.

Bougrov, N. G.; Baturin, V. A., Göksu, H. Y.; Degteva, M. External gamma-dose reconstruction in the upper Techa River: The new results of thermoluminescence investigations. In: Chronic radiation exposure: Possibilities of biological indication. Chelyabinsk: Urals Research Center for Radiation Medicine; 2000:177–178 (in Russian and English).

Degteva, M. O.; Jacob, P.; Vorobiova, M. I.; **Bougrov, N. G.**; Akleyev, A. V.; Romanyukha, A. A.; Wieser, A.; Meckbach, R.; Göksu, H. Y.; Taranenko, V. A. Comparative analysis of methods used in external dose reconstruction for the Techa River population. In: Chronic radiation exposure: Possibilities of biological indication. Chelyabinsk: Urals Research Center for Radiation Medicine; 2000:176–177 (in Russian and English).



Photo of Nikolai Bougrov dressed to be Master of Ceremonies at the reception for the Conference: Chronic radiation exposure: Possibilities of biological indication. Chelyabinsk, March 2000

Name: Denis V. Ivanov

Date of starting work under Project 1.1: July 2000

Type of degree when work started under Project 1.1: Russian Diploma (Nuclear Physics).

Description of work under Project 1.1: Interpretation of EPR measurements

Paid or unpaid: Paid

Other activities:

- International Science and Technology Center (ISTC) Project #509, 1999–Present
- INCO COPERNICUS Contract No. ERBIC-15CT-969305 1998–1999

Education: Graduated from the Urals State Technical University, Ekaterinburg, Russia, in 1998 with Russian Diploma (considered equivalent to an M.S. degree).

Accomplishments: Participated in the successful completion of Milestone 2 for the Second Phase of Project 1.1 (April 2001).

Conferences:

- Interregional Conference “Discussion on the Problems of Long-term Ecological and Genetic After-effects of the nuclear explosion at Totskoye Test Site in the Southern Urals and Their Resolution,” Ekaterinburg, Russia, October 2000 (oral presentation)
- First Regional Conference on “Adaptation of biological systems to natural and extreme conditions,” Chelyabinsk, Russia, April 2001 (oral presentation)

Current Status: Russian Diploma, graduate student of the Metal Physics Institute under Russian Academy of Sciences (his scientific mentor is Dr. E. Shishkina)

Scientific Publications:

Romanyukha, A. A.; Ignatiev, E. A.; **Ivanov, D. V.**; Vasilyev, A. G. The distance effect on the individual exposures evaluated from the Soviet Nuclear Bomb Test in 1954 at Totskoye Test Site in 1954. Radiat. Prot. Dosim. 86:53–58; 1999.

Romanyukha, A. A.; Ignatiev, E. A.; **Ivanov, D. V.** Retrospective EPR dosimetry on tooth enamel: The first results of application to estimate the dose loads in eye-witnesses of nuclear weapons testing at the Totzky military range. In: Late ecological-genetic consequences of radiation incidents: Totzky atomic bomb test (Orenburg Oblast, 1954). Ekaterinburg: “Ekaterinburg,” 2000:173–190 (in Russian).

Shishkina, E. A.; Shved, V. A.; Bayankin, S. N.; **Ivanov, D. V.** Application of EPR spectrometry for individual external dose reconstruction. In: Proceedings of first regional conference on ‘Adaptation of biological systems to natural and extreme conditions.’ Chelyabinsk: Chelyabinsk State Pedagogical University; 2001 (in Russian) (in press).

Shishkina, E. A.; Shved, V. A.; Degteva, M. O.; Tolstykh, E. I.; **Ivanov, D. V.**; Bayankin, S. N.; Anspaugh, L. R.; Napier, B. A.; Wieser, A.; Jacob, P. Description of the computer database “tooth” and discussion of requirements for EPR measurements to support a validation study of external doses calculated by use of the Techa River Dosimetry System–2000. Chelyabinsk and Salt Lake City: Urals Research Center for Radiation Medicine and University of Utah; Final report for Milestone 2; April 2001 (in Russian and English).

Name: Victor A. Krivoschapov

Date of starting work under Project 1.1: November 2000

Type of degree when work started under Project 1.1: Graduate student of Mathematical Analysis Department of Southern Ural State University (SUSU), Chelyabinsk, Russia

Description of work under Project 1.1: Computer system administrator of Biophysics Laboratory; development of numerical methods for the reconstruction of ^{90}Sr intake

Paid or unpaid: Paid

Education: Graduated from SUSU in 1999 with Russian Diploma (considered to be equivalent to an M.S. degree).

Accomplishments: Upgrade of all laboratory workstations and the installation of an upgraded laboratory network server in 2001

Conferences:

- First Regional Conference “Adaptation of biological systems to natural and extreme conditions”, Chelyabinsk, Russia, April 2001 (oral presentation)

Current Status: Russian Diploma, graduate student of SUSU; his work assignment is at the URCRM Biophysics Laboratory (Dr. V. Zalyapin is Victor’s Professor and is a collaborator on JCCRER Project 1.1)

Scientific Publications:

Krivoschapov, V. A.; Zalyapin, V. I. Use of numerical methods for strontium-90 intake reconstruction for Muslyumovo residents based on *in vivo* measurements of strontium-90 in tooth enamel. In: Proceedings of First Regional Conference ‘Adaptation of Biological Systems to Natural and Extreme Conditions.’ Chelyabinsk: Chelyabinsk State Pedagogical University; 2001 (in Russian) (in press).



Victor Krivoschapov

Name: Marina V. Rtischeva

Date of starting work under Project 1.1: February 2001

Type of degree when work started under Project 1.1: Undergraduate student of Moscow Engineering Physics Institute (MEPI), Branch №1, Ozyorsk, Russia

Description of work under Project 1.1: Modeling of ^{137}Cs body burdens for the Techa Riverside residents and comparison with the results of whole-body counting.

Paid or unpaid: Unpaid

Education: Graduated from MEPI Branch №1 in June 2001 with Russian Diploma (considered to be equivalent to an M.S. degree) under supervision of Dr. E. Tolstykh of the URCRM Biophysics Laboratory.

Conferences:

- Student conference “Science days,” Ozyorsk, Russia, April 2001 (oral presentation)

Current Status: Russian Diploma, not in science



Marina Rtischeva at the Science Days” student conference in Ozyorsk, April 2001.

Name: Natalia B. Shagina

Date of starting work under Project 1.1: March 1999

Type of degree when work started under Project 1.1: Undergraduate student of Moscow Engineering Physics Institute (MEPI), Branch №1, Ozyorsk, Russia

Description of work under Project 1.1: Uncertainty analysis of strontium retention in humans; development of an improved strontium biokinetic model.

Paid or unpaid: Paid

Education: Graduated from MEPI, Branch №1, in June 1999, with Russian Diploma (considered to be equivalent to an M.S. degree) under supervision of Dr. M. Degteva.

Accomplishments: Successful completion of Milestone 11 for the First Phase of Project 1.1 (March 2000) and Milestone 1 for the Second Phase of Project 1.1 (September 2000).

Awards:

- Winner of the competition of diplomas and graduation theses of the Russian Ministry of Atomic Energy, 2000
- Winner of the regional competition of diplomas on specialty “Environmental protection and natural resources conservation,” 2000
- Student Scholarship for Prague 2000 – 5th International Symposium and Exhibition on Environmental Contamination in Central and Eastern Europe

Conferences:

- Scientific Session “MEPI – 2000,” Moscow, Russia, January 2000 (oral presentation)
- Scientific Session “Snezhinsk and Science,” Snezhinsk, Russia, June 2000 (oral presentation)
- Tenth International Congress of the International Radiation Protection Association, Hiroshima, Japan, May 2000 (poster presentation)
- Fifth International Symposium on Environmental Contamination in Central and Eastern Europe, Prague, Czech Republic, September 2000 (poster presentation)
- First Regional Conference “Adaptation of Biological Systems to Natural and Extreme Conditions,” Chelyabinsk, Russia, April 2001 (oral presentation)
- Third International Conference “Medical Consequences of the Chernobyl Catastrophe: Results of 15 years of Research,” Kyiv, Ukraine, June 2001 (poster presentation)

Current Status: Russian Diploma, staff member of URCRM Biophysics Laboratory. Currently working on Ph.D. (under supervision of Dr. M. Degteva).

Scientific Publications:

Shagina, N. B.; Degteva, M. O.; Tolstykh, E. I. Uncertainty analysis of strontium retention in humans resulting from individual variability in metabolic parameters. In: Harmonization of radiation, human life and the ecosystem, Proceedings of 10th International Congress on Radiation

Protection. Hiroshima, Japan, May 14-19, 2000. Hiroshima: International Radiation Protection Association; CD-ROM; Paper No. P-3a-128; 2000.

Shagina, N. B.; Degteva, M. O.; Tolstykh, E. I. Uncertainty analysis of strontium retention in humans using the method of stochastic modeling. In: Proceedings of Moscow State Engineering Physics Institute Scientific Session “MEPI – 2000,” 5:22–23; 2000 (in Russian).

Degteva, M. O.; Anspaugh, L. R.; Napier, B. A.; Tolstykh, E. I.; **Shagina, N. B.**; Kozheurov, V. P.; Vorobiova, M. I.; Tokareva, E. E.; Shishkina, E. A. Analysis of the main factors contributing to uncertainty in internal dose from ^{90}Sr and feasibility evaluation for reduction in uncertainty. Chelyabinsk and Salt Lake City: Urals Research Center for Radiation Medicine and University of Utah; Final Report for Milestone 8; November 1999 (in Russian and English).

Napier, B. A.; **Shagina, N. B.**; Degteva, M. O.; Tolstykh, E. I.; Vorobiova, M. I.; Anspaugh, L. R. Preliminary uncertainty analysis for the doses estimated using the Techa River Dosimetry System – 2000. Chelyabinsk and Salt Lake City: Urals Research Center for Radiation Medicine and University of Utah; Final Report for Milestone 11; March 2000 (in Russian and English).

Degteva, M. O.; Anspaugh, L. R.; Napier, B. A.; Vorobiova, M. I.; Tolstykh, E. I.; Kozheurov, V. P.; Kozyrev, A. V.; Bougrov, N. G.; Kovtun, A. N.; **Shagina, N. B.**; Shishkina, E. A.; Tokareva, E. E.; Taranenko, V. A. Development of an improved dose reconstruction system for the general population affected by the operation of the Mayak Production Association. Final Report. Chelyabinsk and Salt Lake City: Urals Research Center for Radiation Medicine and University of Utah; March 2000 (in Russian and English).

Shagina, N. B.; Kozheurov, V. P.; Degteva, M. O.; Tolstykh, E. I.; Tokareva, E. E. Study of radionuclides body-burden variability for the population of the Urals region. In: Proceedings of Snezhinsk Physics Technical Institute Scientific Session “Snezhinsk and Science,” 1:337-338; 2000 (in Russian).

Shagina, N. B.; Kozheurov, V. P.; Degteva, M. O.; Tolstykh, E. I.; Tokareva, E. E. Study of ^{90}Sr body-burden variability for the population of the Urals Region. In: Proceedings of the fifth international symposium on environmental contamination in Central and Eastern Europe. Tallahassee: Institute for International Cooperative Environmental Research, Florida State University; DOE/EM-0584, Abstract ID726; 2000.

Kozheurov, V. P.; Zalyapin, V. I.; **Shagina, N. B.**; Tokareva, E. E.; Degteva, M. O.; Tolstykh, E. I.; Anspaugh, L. R.; Napier, B. A. Statistical analysis of individual dosimetric data and evaluation of uncertainties in instrumental techniques used for ^{90}Sr -body-burden evaluation (whole body count and tooth beta count). Chelyabinsk and Salt Lake City: Urals Research Center for Radiation Medicine and University of Utah; Final Report for Milestone 1; September 2000 (in Russian and English).

Napier, B. A.; **Shagina, N. B.**; Degteva, M. O.; Tolstykh, E. I.; Vorobiova, M. I.; Anspaugh, L. R. Preliminary uncertainty analysis for the doses estimated using the Techa River Dosimetry System – 2000. Health Phys. 2001 (anticipated in October issue).

Degteva, M. O.; Vorobiova, M. I.; Tolstykh, E. I.; **Shagina, N. B.**; Anspaugh, L. R.; Napier, B. A. Dosimetry of the Techa River System: Dose reconstruction for radiation consequences risk assessment. Radiat. Safety Problems (Mayak Production Association Scientific Journal) № 4:36–46; 2000 (in Russian).

Tolstykh, E. I.; Degteva, M. O.; **Shagina, N. B.**; Kozheurov, V. P.; Repin, V. S.; Novak, N. Yu.; Berkovski, V.; Noßke, D. Biokinetic models for strontium: Estimation of reliability for the late period after intake. Intl. J. Radiat. Med. 3:133 (in English) and 301 (in Russian); 2001.



Natalia Shagina is shown at the far right during the 5th International Symposium on Environmental Contamination in Central and Eastern Europe, Prague, September 2000. Two other URCRM personnel are also in the picture; Elena Tokareva, who received her Russian Diploma while working at the URCRM, is second from left. Valentina Shved is in the center; she is currently working on her Ph.D. at the URCRM.

Name: Elena A. Shishkina

Date of starting work under Project 1.1: February 1995.

Type of degree when work started under Project 1.1: Russian Diploma (Physics)

Description of work under Project 1.1: Interpretation of EPR measurement results, Monte Carlo simulation of electron and photon transport; Task Leader for validation of external doses.

Paid or unpaid: Paid

Other activities:

- International Science and Technology Center (ISTC) Project #509, 1999–Present
- INCO COPERNICUS Contract No. ERBIC-15CT-969305 1997–1999

Education: Received Ph.D. (Ecology) in 1998 at the Institute of Plant and Animal Ecology, Ekaterinburg, Russia.

Supplementary education: Training Course “Advanced MCNP Topics,” Imperial College, London, UK, 1999 (sponsored by US DoE)

Accomplishments: Successful completion of Milestone 8 for the First Phase of Project 1.1 (November 1999) and Milestone 2 for the Second Phase of Project 1.1 (April 2001).

Conferences:

- IRPA-10 International Congress of the International Radiation Protection Association, “Harmonization of Radiation Human Life and the Ecosystem,” May 14–19, 2000 (poster presentation);
- Second International Symposium “Chronic Radiation Exposure: Possibilities of biological indication,” Chelyabinsk, Russia, March 14–16, 2000 (poster presentation);
- Conference on “Problems of Ecology and Ecological Education in Chelyabinsk Region,” Chelyabinsk, Russia, April 2000 (oral presentation);
- First Regional Conference on “Adaptation of Biological Systems to Natural and Extreme Conditions,” Chelyabinsk, Russia, April 2001 (oral presentation)

Current Status: Ph.D., Researcher at the URCRM Biophysics Laboratory.

Scientific Publications:

Degteva, M. O., Kozheurov, V. P.; Burmistrov, D. S.; Vorobiova, M. I.; Valchuk, V. V.; Bougrov, N. G.; **Shishkina, H. A.** An approach to dose reconstruction for the Urals population. Health Phys. 71:71–76; 1996.

Romanyukha, A. A.; Degteva, M. O.; Kozheurov, V. P.; Wieser, A.; Jacob, P.; Vorobiova, M. I.; Ignatiev, E. A.; **Shishkina, E. A.**; Koshta, A. A. Retrospective evaluation of external component of individual doses for Techa Riverside residents. In: Proceedings 1996 international congress on radiation protection. Seibersdorf: International Radiation Protection Association; ISBN 3-9500255-4-5; 1996, Vol. 3:111–113.

Lyubashevsky, N. M.; Starichenko, V. I.; Golubev, A. G.; **Shishkina, E. A.** The theory of individual variability of osteotropic radionuclide metabolism. In: Proceedings 1996 international congress on radiation protection. Seibersdorf: International Radiation Protection Association; ISBN 3-9500255-4-5; 1996, Vol. 3:128–130.

Ignatiev, E. A.; Lyubashevsky, N. M.; **Shishkina, E. A.**; Romanyukha, A. A. EPR dose reconstruction of bone-seeking ^{90}Sr . Appl. Radiat. Isot. 51:151–159, 1999.

Shishkina E. A.; Shved V. A. Assessment of internal exposure in the tooth tissues due to incorporated ^{90}Sr . In: Chronic radiation exposure: Possibilities of biological indication. Chelyabinsk: Urals Research Center for Radiation Medicine; 2000:192 (in Russian and English).

Tolstykh, E. I.; Degteva, M. O.; Kozheurov, V. P.; **Shishkina, E. A.**; Romanyukha, A. A.; Wieser, A.; Jacob, P. Strontium metabolism in teeth and enamel dose assessment: Analysis of the Tcha river data. Radiat. Environ. Biophys. 39:161–171; 2000.

Shved, V. A.; **Shishkina, E. A.** Assessment of tooth tissues dose rate coefficients from incorporated strontium-90 in EPR dose reconstruction for the Tcha Riverside population. . In: Harmonization of radiation, human life and the ecosystem, Proceedings of 10th international congress on radiation protection. Hiroshima: International Radiation Protection Association; CD-ROM; Paper No. P-3a-212; 2000.

Degteva, M. O.; Anspaugh, L. R.; Napier, B. A.; Vorobiova, M. I.; Tolstykh, E. I.; Kozheurov, V. P.; Kozyrev, A. V.; Bougrov, N. G.; Kovtun, A. N.; Shagina, N. B.; **Shishkina, E. A.**; Tokareva, E. E.; Taranenko, V. A. Development of an improved dose reconstruction system for the general population affected by the operation of the Mayak Production Association. Final Report. Chelyabinsk and Salt Lake City: Urals Research Center for Radiation Medicine and University of Utah; March 2000 (in Russian and English).

Shved, V. A.; **Shishkina, E. A.** Sampling and odontometric measurements of teeth from donor residents in contaminated territory. In: Proceedings of the fifth international symposium on environmental contamination in Central and Eastern Europe. Tallahassee: Institute for International Cooperative Environmental Research, Florida State University; DOE/EM-0584, Abstract ID732; 2000.

Shved, V. A.; **Shishkina, E. A.** Measurements of tooth sizes for the population of the Urals region. In: Proceedings of Snezhinsk Physics Technical Institute scientific session “Snezhinsk and Science,” 1:337–338; 2000 (in Russian).

Shishkina, E. A.; Shved, V. A. Reconstruction of internal cumulative dose for dental tissues. In: Problems of ecology and ecological education in the Chelyabinsk Region. Chelyabinsk: Chelyabinsk State Pedagogical University; 2001:96–100 (in Russian).

Shishkina, E. A.; Shved, V. A.; Bayankin, S. N.; Ivanov, D. V. Application of EPR spectrometry for individual external dose reconstruction. In: Proceedings of 1st regional

conference “Adaptation of biological systems to natural and extreme conditions.” Chelyabinsk: Chelyabinsk State Pedagogical University Publisher; 2001 (in Russian) (in press).

Shved, V. A.; **Shishkina, E. A.** Effect of tooth geometric model on calculated enamel internal dose from incorporated ^{90}Sr . In: Proceedings of 1st regional conference “Adaptation of biological systems to natural and extreme conditions.” Chelyabinsk: Chelyabinsk State Pedagogical University Publisher; 2001 (in Russian) (in press).

Shishkina, E. A.; Lyubashevskii, N. M.; Tolstykh, E. I.; Ignatiev, E. A.; Betenekova, T. A.; Nikiforov, S. V. A mathematical model for calculation of ^{90}Sr absorbed dose in dental tissues: Elaboration and comparison to EPR measurements. Appl. Radiat. Isot. 55:363–374; 2001.

Shishkina, E. A.; Shved, V. A.; Degteva, M. O.; Tolstykh, E. I.; Ivanov, D. V.; Bayankin, S. N.; Anspaugh, L. R.; Napier, B. A.; Wieser, A.; Jacob, P. Description of the computer database “tooth” and discussion of requirements for EPR measurements to support a validation study of external doses calculated by use of the Techa River Dosimetry System–2000. Chelyabinsk and Salt Lake City: Urals Research Center for Radiation Medicine and University of Utah; Final report for Milestone 2; April 2001 (in Russian and English).



Elena Shishkina in her office at the URCRM. Decorations are by her daughter Vlada.

Name: Valentina A. Shved

Date of starting work under Project 1.1: February 1999

Type of degree when work started under Project 1.1: Undergraduate student of the Moscow Engineering Physics Institute (MEPI), Branch №1, Ozyorsk, Russia

Description of work under Project 1.1: Calculation of dose coefficients for dental tissues from incorporated strontium-90; Task Leader on improvement and updating of computer database “TOOTH”; Odontometric measurements of tooth samples.

Paid or unpaid: Paid

Education: Graduated from MEPI Branch №1 in June 1999, with a Russian Diploma (considered equivalent to an M.S. degree) under supervision of Dr. E. Shishkina.

Accomplishments: Participated in the successful completion of Milestone 2 for the Second Phase of Project 1.1 (April 2001).

Other activity: International Science and Technology Center (ISTC) Project #509, 1999–Present

Awards: Student Scholarship for Prague 2000—5th International Symposium and Exhibition on Environmental Contamination in Central and Eastern Europe

Conferences:

- Scientific Session “MEPI – 2000,” Moscow, Russia, January 2000 (oral presentation)
- Scientific Session “Snezhinsk and Science,” Snezhinsk, Russia, June 2000 (oral presentation)
- Tenth International Congress of the International Radiation Protection Association, Hiroshima, May 2000 (poster presentation)
- Fifth International Symposium on Environmental Contamination in Central and Eastern Europe, Prague, Czech Republic, September 2000 (poster presentation)
- First Regional Conference “Adaptation of biological systems to natural and extreme conditions,” Chelyabinsk, Russia, April 2001 (oral presentation)

Current Status: Russian Diploma., contract employee of URCRM Biophysics Laboratory; currently working on Ph.D. under supervision of Dr. E. Shishkina.

Scientific Publications:

Shved, V. A.; Shishkina, E. A. Assessment of tooth tissues dose rate coefficients from incorporated strontium-90 in EPR dose reconstruction for the Techa Riverside population. . In: Harmonization of radiation, human life and the ecosystem, Proceedings of 10th international congress on radiation protection. Hiroshima: International Radiation Protection Association; CD-ROM; Paper No. P-3a-212; 2000.

Shved, V. A.; Shishkina, E. A.. Assessment of tooth tissues dose coefficients from incorporated strontium-90 for the Techa Riverside population. In: Proceedings of Moscow State Engineering Physics Institute Scientific Session “MEPI – 2000,” 5:24–25; 2000 (in Russian).

Shishkina E. A.; **Shved V. A.** Assessment of internal exposure in the tooth tissues due to incorporated ^{90}Sr . In: Chronic radiation exposure: Possibilities of biological indication. Chelyabinsk: Urals Research Center for Radiation Medicine; 2000:192 (in Russian and English).

Shved, V. A.; Shishkina, E. A. Sampling and odontometric measurements of teeth from donor residents in contaminated territory. In: Proceedings of the fifth international symposium on environmental contamination in Central and Eastern Europe. Tallahassee: Institute for International Cooperative Environmental Research, Florida State University; DOE/EM-0584, Abstract ID732; 2000.

Shved, V. A.; Shishkina, E. A. Measurements of tooth sizes for the population of the Urals region. In: Proceedings of Snezhinsk Physics Technical Institute scientific session “Snezhinsk and Science,” 1:337–338; 2000 (in Russian).

Shishkina, E. A.; **Shved, V. A.** Reconstruction of internal cumulative dose for dental tissues. In: Problems of ecology and ecological education in Chelyabinsk Region. Chelyabinsk: Chelyabinsk State Pedagogical University Publisher; 2001:96–100 (in Russian).

Shishkina, E. A.; **Shved, V. A.**; Bayankin, S. N.; Ivanov, D. V. Application of EPR spectrometry for individual external dose reconstruction. In: Proceedings of 1st regional conference “Adaptation of biological systems to natural and extreme conditions.” Chelyabinsk: Chelyabinsk State Pedagogical University; 2001 (in Russian) (in press).

Shved, V. A.; Shishkina, E. A. Effect of tooth geometric model on calculated enamel internal dose from incorporated ^{90}Sr . Proceedings of 1st regional conference “Adaptation of biological systems to natural and extreme conditions.” Chelyabinsk: Chelyabinsk State Pedagogical University; 2001 (in Russian) (in press).

Shishkina, E. A.; **Shved, V. A.**; Degteva, M. O.; Tolstykh, E. I.; Ivanov, D. V.; Bayankin, S. N.; Anspaugh, L. R.; Napier, B. A.; Wieser, A.; Jacob, P. Description of the computer database “tooth” and discussion of requirements for EPR measurements to support a validation study of external doses calculated by use of the Techa River Dosimetry System–2000. Chelyabinsk and Salt Lake City: Urals Research Center for Radiation Medicine and University of Utah; Final report for Milestone 2; April 2001 (in Russian and English).



Valentina Shved, in the center of the picture, is demonstrating the use of the tooth-beta counter to measure ^{90}Sr in the front teeth. Assisting her is Elena Tokareva, another researcher who completed her undergraduate degree while working at the Biophysics Laboratory of the URCRM.

Name: Valeri A. Taranenko

Date of starting work under Project 1.1: October 1997

Type of degree when work started under Project 1.1: Undergraduate student of Southern Urals State University (SUSU), Chelyabinsk, Russia.

Description of work under Project 1.1: Computer system administrator of Biophysics Laboratory, 1997–2000; Monte Carlo simulation of photon transport in the environment, 1999–2000.

Paid or unpaid: Paid

Other activities:

- International Science and Technology Center (ISTC) Project #509, 1999–2000
- INCO COPERNICUS Contract No. ERBIC-15CT-969305 1997–1999

Education: Graduated from SUSU in May 2000, with a Russian Diploma (considered equivalent to an M.S. degree) under supervision of Dr. Degteva.

Supplementary education: Training Course “Advanced MCNP Topics,” Imperial College, London, UK, 1999 (sponsored by US DoE).

Accomplishments: The installation of laboratory network server and computational server; creation of laboratory web site (www.biophys.urcrm.chel.su).

Awards: Symposium Fellowship for 4th International Symposium and Exhibition on Environmental Contamination in Central and Eastern Europe, Warsaw.

Conferences:

- Problems of Ecology and Ecological Education in Chelyabinsk Region 2000, Chelyabinsk, Russia, January 2000, (oral presentation)
- Fourth International Symposium on Contamination of Environment in Central and Eastern Europe, Warsaw, Poland, September 1998, (oral presentation)

Current Status: Russian Diploma, graduate student on leave from SUSU; guest scientist in Institute of Radiation Protection, GSF, Munich, Germany, since October 2000.

Scientific Publications:

Burmistrov, D.; **Taranenko, V.**; Linkov, I. Dynamic modeling of radionuclides fate and transport in the Techa River and its application for dose reconstruction. In: Proceedings of 4th International Symposium on Environmental Contamination in Central and Eastern Europe, Warsaw, Poland, September 15-17, 1998.

Taranenko, V. A.; Degteva, M. O. Retrospective modeling of gamma transport for the Techa Riverside. In: Proceedings of Monte Carlo 2000 – Advanced Monte Carlo for radiation physics, particle transport, simulation and applications, 2001 (in press).

Taranenko, V. A.; Degteva, M. O.; Meckbach, R. Gamma-field distribution near reservoir contaminated by radionuclides. In: Problems of ecology and ecological education in Chelyabinsk Region. Chelyabinsk: Chelyabinsk State Pedagogical University; 96-100; 2001:80–83 (in Russian).

Degteva, M. O.; Jacob, P.; Vorobiova, M. I.; Bougrov, N. G.; Akleyev, A. V.; Romanyukha, A. A.; Wieser, A.; Meckbach, R.; Goksu, H. Y.; **Taranenko, V. A.** Comparative analysis of methods used in external dose reconstruction for the Techa river population. In: Chronic radiation exposure: Possibilities of biological indication. Chelyabinsk: Urals Research Center for Radiation Medicine; 2000:176–177 (in Russian and English).

Degteva, M. O., Anspaugh, L. R., Napier, B. A., Vorobiova, M. I., Tolstykh, E. I., Kozheurov, V. P., Kozyrev, A. V., Bougrov, N. G., Kovtun, A. N., Shagina, N. B., Shishkina, E. A., Tokareva, E. E., **Taranenko, V. A.** Development of an improved dose reconstruction system for the general population affected by the operation of the Mayak Production Association. Final Report. Chelyabinsk and Salt Lake City: Urals Research Center for Radiation Medicine and University of Utah, March 2000 (in Russian and English).



Valeri Taranenko on location at Imperial College for an advanced course on Monte Carlo modeling using the MCNP code.

Name: Elena E. Tokareva

Date of starting the work under Project 1.1: February 1995

Type of degree when work started under Project 1.1: Undergraduate student of Chelyabinsk Technical University (CTU), Chelyabinsk, Russia

Description of work under the Project 1.1: Operator of the whole body counter SICH-9.1 in 1995–1997; Manager of database on ^{90}Sr body-burden measurements; Task leader on creation of computerized Household Registry for the Techa River settlements.

Paid or unpaid: Paid

Other activities:

- International Science Foundation (ISF) Grant NM5000, 1995–1996
- INCO COPERNICUS Contract No. ERBIC-15CT-969309 1997–1999

Education: Graduated from CTU in 1997, with Russian Diploma (considered equivalent to an M.S. degree).

Accomplishments: Participated in the successful completion of Milestone 8 for the First Phase of Project 1.1 (November 1999) and Milestone 1 for the Second Phase of Project 1.1 (September 2000)

Awards: Symposium Fellowship for Prague 2000 – 5th International Symposium and Exhibition on Environmental Contamination in Central and Eastern Europe

Conferences:

- Problems of Ecology and Ecological Education in Chelyabinsk Region 2000, Chelyabinsk, Russia, January 2000, (oral presentation)
- Fifth International Symposium on Environmental Contamination in Central and Eastern Europe, Prague, Czech Republic, September 2000, (oral presentation)

Current Status: Russian Diploma, Staff Member of the URCRM Biophysics Laboratory.

Scientific Publications:

Degteva, M. O.; Anspaugh, L. R.; Napier, B. A.; Tolstykh, E. I.; Shagina, N. B.; Kozheurov, V.P.; Vorobiova, M. I.; **Tokareva, E. E.**; Shishkina, E. A. Analysis of the main factors contributing to uncertainty in internal dose from ^{90}Sr and feasibility evaluation for reduction in uncertainty. Chelyabinsk and Salt Lake City: Urals Research Center for Radiation Medicine and University of Utah; Final Report for Milestone 8; November 1999 (in Russian and English).

Degteva, M. O., Anspaugh, L. R., Napier, B. A., Vorobiova, M. I., Tolstykh, E. I., Kozheurov, V. P., Kozyrev, A. V., Bougrov, N. G., Kovtun, A. N., Shagina, N. B., Shishkina, E. A., **Tokareva, E. E.**, Taranenko, V. A. Development of an improved dose reconstruction system for the general population affected by the operation of the Mayak Production Association. Final

Report. Chelyabinsk and Salt Lake City: Urals Research Center for Radiation Medicine and University of Utah, March 2000 (in Russian and English).

Tokareva E. E.; Degteva M. O.; Tolstykh E. I.; Kozheurov V. P. Analysis of factors affecting the levels of ^{90}Sr -body-burdens for the Tcha Riverside residents. In: Problems of ecology and ecological education in Chelyabinsk Region. Chelyabinsk: Chelyabinsk State Pedagogical University; 2001:84–82 (in Russian).

Tokareva, E. E.; Kozheurov, V. P.; Tolstykh, E. I. Degteva, M. O. Analysis of in vivo measurements of ^{90}Sr in human teeth and body. In: Proceedings of the fifth international symposium on environmental contamination in Central and Eastern Europe. Tallahassee: Institute for International Cooperative Environmental Research, Florida State University; DOE/EM-0584, Abstract ID740; 2000.

Shagina, N. B.; Kozheurov, V. P.; Degteva, M. O.; Tolstykh, E. I.; **Tokareva, E. E.** Study of ^{90}Sr body-burden variability for the population of the Urals Region. In: Proceedings of the fifth international symposium on environmental contamination in Central and Eastern Europe. Tallahassee: Institute for International Cooperative Environmental Research, Florida State University; DOE/EM-0584, Abstract ID726; 2000.

Kozheurov, V. P.; Zalyapin, V. I.; Shagina, N. B.; **Tokareva, E. E.**; Degteva, M. O.; Tolstykh, E. I.; Anspaugh, L. R.; Napier, B. A. Statistical analysis of individual dosimetric data and the evaluation of uncertainties in instrumental techniques used for ^{90}Sr -body burden evaluation (whole body count and tooth-beta count). Chelyabinsk and Salt Lake City: Urals Research Center for Radiation Medicine and University of Utah; Final report for Milestone 1; September 2000 (in Russian and English).



Elena Tokareva is working on the Household Registry at the Biophysics Laboratory.

Name: Marina I. Vorobiova

Date of starting work under Project 1.1: February 1995.

Type of degree when work started under Project 1.1: Russian Diploma (considered equivalent to an M.S. degree) in Theoretical Physics

Description of work under Project 1.1: Modeling of radionuclide transport in the Techa River and external dose reconstruction for the Techa riverside residents

Paid or unpaid: Paid

Other activities:

- International Science and Technology Center (ISTC) Project #509, 1999–Present
- INCO COPERNICUS Contract No. ERBIC-15CT-969305 1997–1999

Education: Received Ph.D. (Ecology) in December 2000 at the Institute of Industrial Ecology, Ekaterinburg, Russia.

Accomplishments: Successful completion of Milestones 1, 3, 4, 6, 8 and 11 for the First Phase of Project 1.1.

Conferences:

- Problems of Ecology and Ecological Education in Chelyabinsk Region 2000, Chelyabinsk, Russia, January 2000, (invited lecture);
- Second International Symposium “Chronic Radiation Exposure: Possibilities of Biological Indication,” Chelyabinsk, Russia, March 2000, (poster presentation);
- Eight International Ecological Symposium “Ural Atomic, Ural Industrial,” Perm – Moscow, May 2000, (oral presentation); and
- First Regional Conference on “Adaptation of biological systems to natural and extreme conditions,” Chelyabinsk, Russia, April 2001 (oral presentation).

Current Status: Ph.D., Senior Researcher of URCRM Biophysics Laboratory

Scientific Publications:

Burmistrov, D. S.; Kozheurov, V. P.; **Vorobiova, M. I.** Elaboration of system of retrospective dose estimation for external irradiation of the Techa Riverside residents. In: Chronic radiation exposure: Risk of late effects. Chelyabinsk: Urals Research Center for Radiation Medicine; 1995:68–69 (in Russian) 138 (in English).

Romanyukha, A. A.; Degteva, M. O., Seregenkov, V. A.; Kozheurov, V. P.; **Vorobiova, M. I.**; Vasilenko, E. A.; Wieser, A.; Kleshchenko, E. D.; Shishkina, E. A.; Khokhryakov, V. F. Individual dose reconstruction for Ural residents based on electron spin resonance signal of teeth. In: Chronic radiation exposure: Risk of late effects. Chelyabinsk: Urals Research Center for Radiation Medicine; 1995:67–68 (in Russian) 138–139 (in English).

Degteva, M. O.; Kozheurov, V. P.; Burmistrov, D. S.; **Vorobyova, M. I.**; Valchuk, V. V.; Bougrov, N. G.; Shishkina, H. A. An approach to dose reconstruction for the Urals population. *Health Phys.* 71:71–76; 1996.

Romanyukha A. A., Degteva M. O., Kozheurov V. P., Wieser A., Jacob P.; **Vorobiova M. I.**; Ignatiev E. A.; Shishkina E. A.; Koshta, A. A. Retrospective evaluation of external component of individual doses for Techa Riverside. In: *Proceedings 1996 international congress on radiation protection*. Seibersdorf: International Radiation Protection Association; ISBN 3-9500255-4-5; 1996, Vol. 3:111–113.

Degteva, M. O.; Kozheurov, V. P.; **Vorobiova, M. I.**; Burmistrov, D. S.; Khokhryakov, V. V.; Suslova, K. G.; Anspaugh, L. R.; Napier, B. A.; Bouville, A. Population exposure dose reconstruction for the Urals region. In: *Assessing health and environmental risks from long-term radiation contamination in Chelyabinsk, Russia*. Washington: American Association for the Advancement of Science; 1997:21–33.

Vorobiova, M. I.; Degteva, M. O.; Kozyrev, A. V.; Anspaugh, L. R.; Napier, B. A. External doses evaluated on the basis of the Techa River Dosimetry System approach. Chelyabinsk and Salt Lake City: Urals Research Center for Radiation Medicine and University of Utah; Final report for Milestone 6; May 1999

Vorobiova, M. I.; Degteva, M. O.; Burmistrov, D. S.; Safronova, N. G.; Kozheurov, V. P.; Anspaugh, L. R.; Napier, B. A. Review of historical monitoring data on Techa River contamination. *Health Phys.* 76:605–618; 1999.

Vorobiova, M. I.; Degteva, M. O. Simple model for the reconstruction of radionuclide concentrations and radiation exposures along the Techa River. *Health Phys.* 77:142–149; 1999.

Degteva, M. O., Anspaugh, L. R., Napier, B. A., **Vorobiova, M. I.**, Tolstykh, E. I., Kozheurov, V. P., Kozyrev, A. V., Bougrov, N. G., Kovtun, A. N., Shagina, N. B., Shishkina, E. A., Tokareva, E. E., Taranenko, V. Development of an improved dose reconstruction system for the general population affected by the operation of the Mayak Production Association. Final Report. Chelyabinsk and Salt Lake City: Urals Research Center for Radiation Medicine and University of Utah, March 2000.

Vorobiova, M. I.; Degteva, M. O.; Anspaugh, L. R.; Napier, B. A. Reassessment of external doses for the Techa River residents. In: *Chronic radiation exposure: Possibilities of biological indication*. Chelyabinsk: Urals Research Center for Radiation Medicine; 2000:181–182 (in Russian and English).

Degteva, M. O.; Jacob, P.; **Vorobiova, M. I.**; Bougrov, N. G.; Akleyev, A. V.; Romanyukha, A. A.; Wieser, A.; Meckbach, R.; Göksu, H. Y.; Taranenko, V. A. Comparative analysis of methods used in external dose reconstruction for the Techa River population. In: *Chronic radiation exposure: Possibilities of biological indication*. Chelyabinsk: Urals Research Center for Radiation Medicine; 2000:176–177 (in Russian and English).

Degteva, M. O.; Kozheurov, V. P.; Tolstykh, E. I.; **Vorobiova, M. I.**; Anspaugh, L. R.; Napier, B. A. The Techa River Dosimetry System: Dose reconstruction for population risk analysis. In:

Harmonization of radiation, human life and the ecosystem, Proceedings of 10th international congress on radiation protection. Hiroshima: International Radiation Protection Association; CD-ROM; Paper No. T-19(1)-4; 2000.

Degteva, M. O.; **Vorobiova, M. I.**; Kozheurov, V. P.; Tolstykh, E. I.; Anspaugh, L. R.; Napier, B. A. Dose reconstruction system for the exposed population living along the Techa River. *Health Phys.* 78, 542-554 (2000).

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Marina Vorobiova recently received her Ph.D. while working on Project 1.1 at the Biophysics Laboratory of the URCRM.